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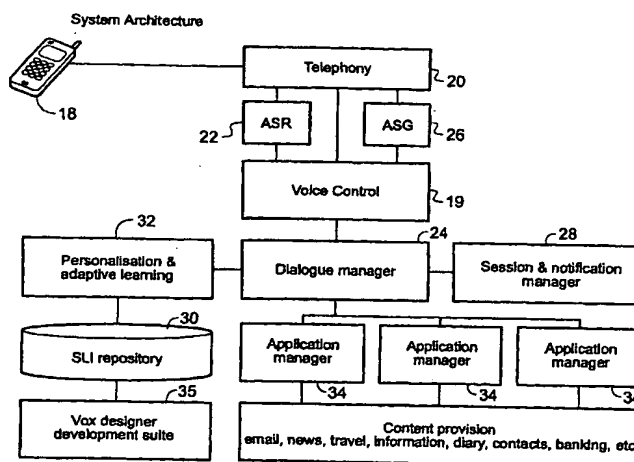
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KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),

[Continued on next page]

(54) Title: **SPOKEN LANGUAGE INTERFACE**



(57) Abstract: A spoken language interface comprises an automatic speech recognition system (22) and a text to speech system (26) controlled by a voice controller (19). The ASR and TTS are connected to a telephony system which receives user speech via a communications link. A dialogue manager (24) is connected to the voice controller and provides control of dialogue generated in response to user speech. The dialogue manager is connected to application managers (34) each of which provide an interface to an application with which the user can converse. Dialogue and grammars are stored in a database (30) as data and are retrieved under the control of the dialogue manager and a personalisation and adaptive learning module (32). A session and notification manager (28) records session details and enables re-connection of a broken conversation at the point at which the conversation was broken.

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European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR,  
GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent  
(BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR,  
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## INTERNATIONAL SEARCH REPORT

International Application No  
PCT/GB 02/00878

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G10L15/22 G10L15/18 G10L13/04 G06F17/60

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G10L G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, INSPEC

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 00 21074 A (LERNOUT & HAUSPIE SPEECHPROD) 13 Apr11 2000 (2000-04-13)	1-3, 5-12, 14, 15, 17, 18, 20, 27-32, 35-37, 39, 47, 49, 53-59, 71-73
Y	abstract; figures 2A-B, 7  page 16, line 13-17 ---  -/-	4, 13, 16, 19, 43, 44, 50-52, 60-68

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

## \* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

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- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- "&" document member of the same patent family

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9 September 2002

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## INTERNATIONAL SEARCH REPORT

International Application No  
PCT/GB 02/00878

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	LAMEL L ET AL: "THE LIMSI ARISE SYSTEM FOR TRAIN TRAVEL INFORMATION" 1999 IEEE INTERNATIONAL CONFERENCE ON ACOUSTICS, SPEECH, AND SIGNAL PROCESSING. PHOENIX, AZ, MARCH 15 - 19, 1999, IEEE INTERNATIONAL CONFERENCE ON ACOUSTICS, SPEECH, AND SIGNAL PROCESSING (ICASSP), NEW YORK, NY: IEEE, US, vol. 1, 15 March 1999 (1999-03-15), pages 501-504, XP000900167 ISBN: 0-7803-5042-1 abstract	13,16, 19,63-68
X	US 6 173 266 B1 (MARX ET AL) 9 January 2001 (2001-01-09)  abstract; figures 4,5,7,8,13,16 column 14, line 47 -column 15, line 12	21-26, 33,34, 74-76
X	US 5 651 096 A (PALLAKOFF G ET AL) 22 July 1997 (1997-07-22)  abstract; figure 2	1,12,15, 18,35, 58,60, 63,71
X	US 6 330 539 B1 (TAKAYAMA ET AL) 11 December 2001 (2001-12-11)  abstract; figure 4 & JP 11 224179 A 17 August 1999 (1999-08-17)	1,12,15, 18,35, 58,60, 63,71
Y	WO 00 14727 A (WEBER DEAN C ;ONE VOICE TECHNOLOGIES INC (US)) 16 March 2000 (2000-03-16) abstract page 5, line 21-28	4,43,44
Y	SCHULZRINNE H ET AL: "THE SESSION INITIATION PROTOCOL: INTERNET-CENTRIC SIGNALING" IEEE COMMUNICATIONS MAGAZINE, IEEE SERVICE CENTER. PISCATAWAY, N.J, US, vol. 38, no. 10, October 2000 (2000-10), pages 134-141, XP000969736 ISSN: 0163-6804 abstract	52
Y	EP 0 938 068 A (AT & T CORP ;NAVAL RESEARCH LAB (US)) 25 August 1999 (1999-08-25) abstract; figure 4 paragraphs '0036!', '0049!	50,51, 60-62
	-/-	

# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/GB 02/00878

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>BARGA R S ET AL: "Persistent client-server database sessions" ADVANCES IN DATABASE TECHNOLOGY - EDBT 2000. 7TH INTERNATIONAL CONFERENCE ON EXTENDING DATABASE TECHNOLOGY. PROCEEDINGS (LECTURE NOTES IN COMPUTER SCIENCE VOL.1777), 2000, pages 462-477, XP002212807 Berlin, Germany, Springer-Verlag, Germany ISBN: 3-540-67227-3 abstract</p>	<p>50,51, 60-62</p>

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/GB 02/00878

### Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

### Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☒ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:  
4, 43-45, 50-52, 60-62
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

#### Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-3,5-20,27-32,35-37,39,47-49,53-59,63-68,71-73

speech dialogue interface for command and control

- 1.1. Claims: 21-26,33-34,74-76

speech dialogue interface development tool

2. Claims: 4,43-45

adaptation of the dialogue manager to the user

3. Claims: 38,69

determining the user's position or demographics for dialogue mode selection

4. Claim : 46

ability to update the system while in use

5. Claims: 40-42

use of data in grammar independent form

6. Claims: 50,51,60-62

use of a session manager, allows to recover a previous dialogue state after deconnexion.

7. Claim : 52

use of a notification manager

8. Claim : 70

selective advertizing

Please note that all inventions mentioned under item 1, although not necessarily linked by a common inventive concept, could be searched without effort justifying an additional fee.

**INTERNATIONAL SEARCH REPORT**  
Information on patent family members

International Application No  
**PCT/GB 02/00878**

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 0021074	A	13-04-2000	AU 6225199 A	26-04-2000
			EP 1119845 A1	01-08-2001
			WO 0021074 A1	13-04-2000
			US 6311159 B1	30-10-2001
US 6173266	B1	09-01-2001	AU 7374798 A	27-11-1998
			CN 1273661 T	15-11-2000
			EP 1021804 A1	26-07-2000
			WO 9850907 A1	12-11-1998
US 5651096	A	22-07-1997	NONE	
US 6330539	B1	11-12-2001	JP 11224179 A	17-08-1999
WO 0014727	A	16-03-2000	AU 5813099 A	27-03-2000
			AU 6243999 A	27-03-2000
			CN 1325527 T	05-12-2001
			CN 1325528 T	05-12-2001
			EP 1110206 A1	27-06-2001
			EP 1110205 A1	27-06-2001
			JP 2002524776 T	06-08-2002
			JP 2002524806 T	06-08-2002
			WO 0014727 A1	16-03-2000
			WO 0014728 A1	16-03-2000
EP 0938068	A	25-08-1999	US 6108644 A	22-08-2000
			EP 0938068 A2	25-08-1999